

N. C. 29th, 56, w., at Fort McKinney, Wyo. 30th, 54, nw., at Bismarek, N. Dak. 31st, 61, nw., at Detroit, Mich.; 54, w., at Red Wing, Minn.; 52, nw., at Huron, S. Dak.

#### LOCAL STORMS.

**7-8th.**—At Birdsnest, Va., 6.85 inches of rain fell from 9 p. m., 7th, to 1 a. m., 8th. With one exception, this was the heaviest rainfall noted at that place in 23 years. At Boston, Mass., there was a decrease of pressure of .49 inch from 8 p. m., 7th, to 8 a. m., 8th, and heavy northeast changing to northwest winds prevailed along the Massachusetts coast.

**10-11th.**—At Cape Henry, Va., high northeast winds prevailed. The anemometer spindle was broken by the force of the wind, and the cups were carried away. Winds of hurricane force were reported off the coast.

**11-12th.**—At Helena, Mont., a heavy snowstorm, with high southwest winds, continued during the night, causing damage to electric wires and trees.

**11-13th.**—At Vineyard Haven, Mass., a northeast storm began at 3 p. m., 11th, and continued during the 12th and 13th. Exceptionally severe gales continued off the middle Atlantic coast.

**11-14th.**—Unusually heavy gales along the coast from the Carolinas to Nova Scotia caused a number of marine disasters. At Hatteras, N. C., the wind reached a velocity of 72 miles per hour from the north on the 12th; the tide was very high, and all traffic was suspended. At Kitty Hawk, N. C., the wind attained a velocity of 78 miles per hour from the northeast on the 12th. High northerly winds during the 12th and 13th caused damage to seaside property along the New Jersey coast. At New Haven, Conn., high northeast winds, with heavy rain, and snow, at intervals, interfered with traffic during the 13th, and all vessels were compelled to seek shelter. At Block Island, R. I., a northeast gale continued from the 11th to 14th, the wind reaching a velocity of 72 miles per hour on the 13th. The storm was generally severe along the New England coast during this period, and a number of minor disasters to shipping were reported.

**18th.**—A report from Port Angeles, Wash., stated that

high west to northwest winds prevailed in the Straits, and that many trees were blown down and telegraph wires considerably damaged along the coast. At Seymour, Ind., a heavy thunderstorm of brief duration occurred in the evening, attended by wind reaching a velocity of 40 miles per hour, and a heavy fall of unusually large hailstones.

**20th.**—At New Haven, Conn., strong south winds in the afternoon caused high water, and wharves were flooded. The highest tide in a number of years was reported at New London, Conn. At Block Island, R. I., the wind reached a velocity of 58 miles per hour from the northeast.

**22d.**—During a north gale at Block Island, R. I., the wind reached a velocity of 64 miles per hour. High winds also prevailed over New York, along the New Jersey coast, and over Chesapeake Bay.

**22d-25th.**—High winds prevailed over Long Island Sound and along the New England coast, resulting in a number of disasters to shipping.

**26th.**—During a thunderstorm in the afternoon a barn near Ithaca, N. Y., was struck by lightning and burned. Heavy gales were reported over the lower lakes and the east part of the upper lake region. The Canadian propeller "Sovereign" was lost in a gale on Lake Superior. Steamers running between Cleveland, Ohio, and Detroit, Mich., were delayed by the storm. The storm was very severe in northern Ohio in the evening, and at Conneaut, Ohio, a number of buildings were blown down.

**29th.**—During high northeast winds on the east coast of southern Florida two schooners went ashore, one on Content Reef, 35 miles northeast of Key West, and the other near Lake North Inlet; loss estimated at \$5,000 to \$6,000.

**30th.**—High winds shifting to northwest, with rain changing to snow, prevailed over North Dakota, the north part of South Dakota, and northern Minnesota.

**31st.**—High west wind caused damage about Red Wing, Minn. Heavy gales prevailed over the Great Lakes. At Detroit, Mich., a wind velocity of 61 miles per hour, and an extreme velocity of 120 miles, was recorded at 4.11 p. m.

#### INLAND NAVIGATION.

##### LOW WATER.

On the 5th the stage of water in the Tennessee River at Chattanooga, Tenn., was 1.8 foot, and navigation was reported suspended. No decided rise occurred in the river at that point during the month, and on the 29th, 30th, and 31st it stood at 1.4 foot on the gauge, the lowest stage noted in 4 years. Except to points above Chattanooga navigation had been closed on the Tennessee River after September 18, 1891. The Ohio River continued low throughout the month, and reports of the 5th stated that a number of steamboats were grounded between Cincinnati, Ohio, and Point Pleasant, W. Va. A press report from Augusta, Me., stated that on the 5th the Kennebec River was lower than at any time during the last 38 years. On the 27th the stage of water in the Chattahoochee River was so low that all boats were taken off, except one light-draught boat plying between Columbus, Ga., and River Junction, Fla. On the 31st the stage of the Red River at Shreveport, La., was —0.6 foot, too low for navigation, and one light-draught boat, only, was running. The Mississippi River continued low, rendering navigation above Memphis, Tenn., difficult. At Saint Louis, Mo., the stage of the water varied from 4.0 feet on the 5th to 9th, to 6.4 feet on the 18th; at Cairo, Ill., from 2.0 feet from the 10th to 13th, to 3.7 feet on the 1st and 21st; and at Memphis, Tenn., from 1.3 foot on the 14th and 15th, to 3.4 feet on the 1st.

##### STAGE OF WATER IN RIVERS.

In the following table are shown the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, October, 1891 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
<i>Red River.</i>						
Shreveport, La. ....	29-9	1	2.7	31	—0.6	3.3
<i>Arkansas River.</i>						
Fort Smith, Ark. ....	22-0	3	5.2	27	0.7	4.5
Little Rock, Ark. ....	23-0	7	4.9	2-5	2.9	2.0
<i>Missouri River.</i>						
Fort Buford, N. Dak. ....	21, 22	6.4	7-17	5.2	1.2	
Sioux City, Iowa. ....	18-7	3, 30, 31	4.4	20	3.8	0.6
Kansas City, Mo. ....	21-0	10, 11	8.8	1	6.1	2.7
<i>Mississippi River.</i>						
Saint Paul, Minn. ....	14-0	3, 4	1.8	24	1.2	0.6
La Crosse, Wis. ....	11-8	12	1.6	1	0.2	1.4
Dubuque, Iowa. ....	16-0	17	2.6	1, 2, 3	1.0	1.6
Davenport, Iowa. ....	15-0	18, 19	1.3	1, 2	0.0	1.3
Keokuk, Iowa. ....	14-0	21, 22, 23	0.9	1, 2, 3	—0.5	1.4
Saint Louis, Mo. ....	30-0	18	6.4	5-9	4.0	2.4
Cairo, Ill. ....	40-0	1, 21	3.7	10-13	2.0	1.7
Memphis, Tenn. ....	33-0	1	3.4	14, 15	1.3	2.1
Vicksburg, Miss. ....	41-0	1	3.4	19, 20	—1.2	4.6
New Orleans, La. ....	13-0	6, 7, 8	4.0	18	2.4	1.6
<i>Ohio River.</i>						
Parkersburg, W. Va. ....	38-0	14	4.0	6-9	1.8	2.2
Cincinnati, Ohio. ....	45-0	19	6.2	10-16	4.5	1.7
Louisville, Ky. ....	24-0	23	3.6	13-17, 28-30	3.0	0.6
<i>Cumberland River.</i>						
Nashville, Tenn. ....	40-0	1	0.6	16-20	0.0	0.6
<i>Tennessee River.</i>						
Chattanooga, Tenn. ....	33-0	2, 3	1.9	29, 30, 31	1.4	0.5
<i>Monongahela River.</i>						
Pittsburg, Pa. ....	29-0	10	6.9	28	5.0	1.9
<i>Savannah River.</i>						
Augusta, Ga. ....	32-0	1	6.8	24, 25, 28, 29	5.5	1.3
<i>Willamette River.</i>						
Portland, Oregon. ....	15-0	31	2.7	13, 14	—0.7	3.4
<i>Susquehanna River.</i>						
Harrisburg, Pa. ....	17-0	24	4.8	4-7	1.7	3.1
<i>Alabama River.</i>						
Montgomery, Ala. ....	48-0	1, 3	0.6	31	—0.3	0.9